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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,088	03/23/2004	Geoffrey Burke Bauer	10543-069	3841
7590		10/28/2009		
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Chicago, IL 60610				
		EXAMINER		
		MANCHO, RONNIE M		
		ART UNIT		
		PAPER NUMBER		
		3664		
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		10/28/2009		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/807,088

Applicant(s)

BAUER ET AL.

Examiner

RONNIE MANCHO

Art Unit

3664

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 7, 9, 11 and 18-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7, 9, 11 and 18-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. In view of the Brief filed on 8/6/09 and view of the petition dated 8/4/09, PROSECUTION IS HEREBY REOPENED as set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

Claims 1-3, 5, 7, 9, 11, 18-30 will be examined herewith.

/KHOI TRAN/

Supervisory Patent Examiner, Art Unit 3664

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, 7, 9, 11, 18-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tseng et al (20050149240) in view of Watson (4601206)

Regarding claim 1, Tseng et al (abstract; figs. 1-8) disclose a system for estimating body states of a vehicle comprising:

a first linear accelerometer and a second linear accelerometer mounted (32, 36; sec. 0031, 0043, figs. 1-4) to the vehicle in separate locations from each other, the first and second linear accelerometers each being configured to measure the acceleration (sec 0025 to 0028, 0046, 0047) of the vehicle in a first direction and generate measured first and second linear acceleration signals (lateral acceleration signal, longitudinal acceleration signal; sec 0025 to 0028, 0046, 0047; see page 6, claims 8-15) based on the acceleration of the vehicle in the first direction, the measured first and second linear acceleration signals defining a first set of linear acceleration signals;

a third linear accelerometer 35 mounted to the vehicle in a separate location from sensors 32 and 36 (figs. 1-4), the third linear accelerometer configured to measure the acceleration of the vehicle in a second direction (sec 0025 to 0028, 0046, 0047; figs. 1- 4) and generate measured third linear acceleration signals (vertical acceleration signal; sec 0025 to 0028, 0046, 0047; see page 6, claims 8-15) based on the acceleration of the vehicle in the second direction, wherein the

second direction is different from the first direction, the measured third acceleration signals defining a second set of acceleration signals.

Tseng et al do not disclose a fourth accelerometer measuring acceleration in a second direction. However, Tseng section 0031 discloses that a system that INCLUDES MULTIPLE acceleration signals for sensing acceleration signals in a first and second direction. The term "includes" is interpreted as "comprising" NOT -- consisting-- as applicant appears to indicate. Now, Watson teaches of: a first linear accelerometer and a second linear accelerometer mounted to a vehicle at separate locations from each other, the first and second linear accelerometers being configured to measure the acceleration of the vehicle in a first direction and generate measured first and second acceleration signals (fig. 1; abstract; col. 3, lines 26-48) based on the acceleration of the vehicle in the first direction; and a third linear accelerometer and a fourth linear accelerometer mounted to the vehicle at separate locations from each other, the third linear and fourth linear accelerometers being configured to measure the acceleration of the vehicle in a second direction and generate measured third and fourth acceleration signals (fig. 1; abstract; col. 3, lines 26-48) based on the acceleration of the vehicle in the second direction.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tseng as taught by Watson (col. 2, lines 7-58) for the purpose of accurately measuring acceleration of vehicle and to further provide accelerometers that eliminate errors due to noise, placements of bulky accelerometers at center of gravity, frequency and limits cost.

The combination of Tseng and Watson further disclose:

a signal adjuster (66, 68, fig. 4; see Tseng) configured to transform the first and second sets of linear acceleration signals from a sensor coordinate system to a body coordinate system associated with the vehicle (see Tseng, sec. 0025-0030, 0046 to 0050); and

an estimating filter (74, fig. 4; see 0044, 0049; see Tseng) configured to receive the transformed first and second sets of linear acceleration signals from the signal adjuster (66, 68, fig. 4) and processes at least one of the transformed first and second sets of linear acceleration signals into at least one of a roll rate, a roll angle and a yaw rate (roll angle, pitch angle, etc; sec. 0044 to 0049; see Tseng figs 4, 6-8).

Regarding claim 2, Tseng/Watson (abstract; sec. 0046-0053; figs. 1-8; see Tseng) disclose the system of claim 1 wherein the filter includes a model of the vehicle dynamics (sec. 0046, 0048) and a model of the linear accelerometer; the at least one of a roll rate, a roll angle, and a yaw rate (roll angle, pitch angle, etc; sec. 0044 to 0049; see Tseng figs 4, 6-8) being based on the at least one of the transformed first and second sets of linear acceleration signals and the models of the vehicle dynamics and linear accelerometers (sec 0046, 0048).

Regarding claim 3, Tseng/Watson (abstract; sec. 0046-0053; figs. 1-8; see Tseng) disclose the system of claim 2 wherein the filter includes an estimator (see Kalman filter, sec. 0049; figs. 6-8 of Tseng), an algorithm being implemented in the estimator to process the at least one of the transformed first and second sets of linear acceleration signals and the models of the vehicle dynamics and linear accelerometers and generate the at least one of a roll rate, a roll angle, and a yaw rate (roll angle, pitch angle, etc; sec. 0044 to 0049; see Tseng figs 4, 6-8).

Regarding claim 5, Tseng/Watson (abstract; sec. 0046-0053; figs. 1-8; see Tseng) disclose the system of claim 1 further comprising an angular rate sensor.

Regarding claim 7, Tseng/Watson (abstract; sec. 0046-0053; figs. 1-8; see Tseng) disclose the system of claim 1, disclose two linear accelerometers that measure accelerations in a third direction, wherein the third direction is different from the first and second directions.

Regarding claim 9, Tseng/Watson (abstract; sec. 0046-0053; figs. 1-8; see Tseng) disclose the system of claim 1 further comprising two accelerometers that measure vertical accelerations of the vehicle.

Regarding claim 11, Tseng/Watson (abstract; sec. 0046-0053; figs. 1-8; see Tseng) disclose the system of claim 1 wherein the signal adjuster further provides compensation for gravity biases associated with the linear accelerometers (see gravity $<g>$, Tseng sec. 0046).

Regarding claims 18-30, Tseng/Watson anticipate the limitations therein in similar sections cited above and through out both prior arts. Further since applicant has admitted that the scope of the claims is the same as those of claims 1-3, 5, 7, 9, 11.

Response to Arguments

4. Applicant's arguments with respect to claims 1-3, 5, 7, 9, 11, 18-30 have been considered but are moot in view of the new ground(s) of rejection.

Communication

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONNIE MANCHO whose telephone number is (571)272-6984. The examiner can normally be reached on Mon-Thurs: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Khoi can be reached on 571-272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ronnie Mancho/
Primary Examiner, Art Unit 3664